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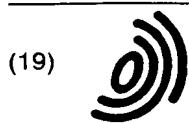
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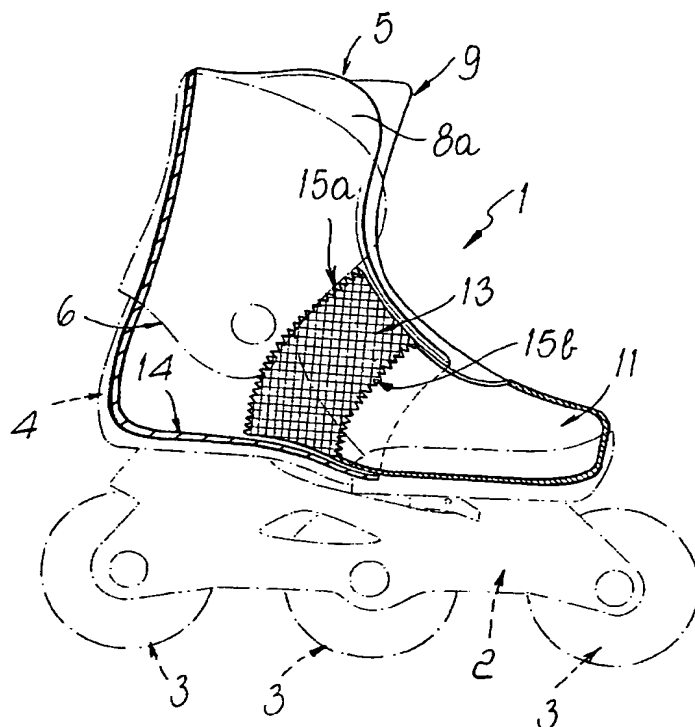
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(54) **Innerboot for sports shoes**

(57) An innerboot for sports shoes, particularly for ski boots or skates constituted by a support (2) for in-line wheels (3), with which a shell or a heel unit (4) for

the containment of the innerboot (5) is associated. The innerboot is constituted by a first element (6) and a separate second element (11) which are interconnected by a third elastically deformable element (13).



*Fig. 2*

## Description

[0001] The present invention relates to an innerboot for sports shoes, particularly for ski boots or for roller skates.

[0002] At present there is the need, especially for young users who are still growing, to have ski boots and skates provided with a size adjustment device.

[0003] A device of this type is all the more interesting because it would allow use of the shoes for an extended period and would also allow to swap or lend ski boots or skates even among users having different foot sizes.

[0004] US-5,678,833 discloses an in-line roller skate whose length can be adjusted.

[0005] Said skate has a rigid supporting frame for a plurality of in-line wheels, a shell which comprises a toe unit and a heel unit, and first means for engagement to said frame which are formed in the heel unit.

[0006] The heel unit has a sole which is adapted to be slidingly connected, by way of second engagement means, to the base of the toe unit.

[0007] Said second engagement means comprise third means, such as a screw, for detachably coupling the base of the toe unit to one part of the frame, thus allowing the toe unit to slide with respect to the heel unit in a direction parallel to the longitudinal axis of the skate.

[0008] Said conventional skate also has a cuff which is connected to the heel unit by means of a connection device, particularly a pair of studs. The studs are connected to sliding means which are provided on the two lateral walls of the toe unit.

[0009] In order to allow the adjustment device to work, the longitudinal movement of the toe unit must be followed by a variation in the length of the innerboot as well.

[0010] For this reason, the cited patent discloses an innerboot which has, at the metatarsal region of the foot, an annular band of elastic material which separates the tip of the innerboot and the part that surrounds the heel and the ankle, both of which are made of soft and non-elastic materials.

[0011] The main drawback of said conventional skate is the fact that it has a limited elongation of the band of elastic material. Such feature would be necessary because a great elongation of the band of elastic material is matched by equally great dimensions thereof.

[0012] Accordingly, when using the skate with a small size setting, a large band would produce a marked reduction in comfort in the front part of the innerboot because of the considerable bulk of the band of elastic material, which is not stretched but compressed in a small space.

[0013] For this reason, the adjustment of the skate provides for limited variations of size (one or two sizes at the most), beyond which the above described drawback becomes significant.

[0014] Moreover, the position of the band of elastic material, arranged completely outside the innerboot, ex-

poses it more to wear and rapid deterioration caused by use and by contact with the outside environment.

[0015] The aim of the present invention is to solve the noted technical problems, eliminating the drawbacks of the cited prior art by providing an innerboot which allows to use the same innerboot of a ski boot or skate for several different foot sizes, with a consequent financial saving during the manufacture and purchase of the innerboot or skate.

[0016] An important object is to provide an innerboot which allows to achieve the intended aim while preserving comfort during use when foot size changes.

[0017] Another important object is to provide an innerboot which achieves the intended aim without requiring inappropriate increase of the space occupied by parts of the innerboot.

[0018] Another object is to protect the parts of the innerboot that are most subject to wear, in order to extend the useful life of said innerboot.

[0019] Another object is to provide an innerboot which is structurally simple and has low manufacturing costs.

[0020] This aim and these and other objects which will become better apparent hereinafter are achieved by an innerboot for sports shoes comprising at least one first element and one separate second element which are interconnected by a third elastically deformable element, characterized in that said third elastically deformable element is connected on the inner part of said first element and is at least partially concealed by said first element.

[0021] Further characteristics and advantages of the invention will become better apparent from the detailed description of a particular embodiment, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

Figure 1 is a perspective view of an innerboot according to the invention;

Figure 2 is a sectional side view of the innerboot applied to an in-line skate in a first small-size setting;

Figure 3 is a sectional side view of the innerboot applied to an in-line skate in a second extended-size setting;

Figure 4 is a perspective view of a first embodiment of an elastically deformable element applied to the innerboot according to the invention;

Figure 5 is a perspective view of a second embodiment of an elastically deformable element;

Figure 6 is a perspective view of a third embodiment of an elastically deformable element.

[0022] With reference to the figures, the reference numeral 1 designates a skate which is constituted by a support 2 for at least two in-line wheels, generally designated by the reference numeral 3.

[0023] A shell or a heel unit, designated by the reference numeral 4, is associated with the support and is

designed to contain an innerboot 5 which can be generically used for sports shoes as well as for skates.

[0024] The innerboot 5 is composed of a first element, designated by the reference numeral 6, which surrounds the malleolar region and partially surrounds the leg and has a front opening 7 which forms a first flap and a second flap, designated by the reference numerals 8a and 8b respectively.

[0025] The innerboot 5 is also constituted by a second front element 11 which surrounds the tip of the foot.

[0026] The front opening 7 can be closed by a tongue 9 which is rigidly coupled to the second element 11, proximate to its lower end, designated by the reference numeral 10.

[0027] The tongue 9 can be arranged at the tibia and can be secured laterally by said first and second flaps 8a and 8b when said skate 1 or the quarter of a ski boot is closed.

[0028] The first element and the second element can partially overlap, respectively at a second front edge 12b and at a first rear edge 12a, which are parallel to each other.

[0029] The first and second elements are connected to one another, at the first and second edges 12a and 12b, by a third element, designated by the reference numeral 13, which is elastically deformable and preferably rectangular.

[0030] In this embodiment, the elastically deformable third element 13 is conveniently arranged inside the first rear element 6; it rests on the bottom 14 of the innerboot and rises along the first and second flaps 8a and 8b.

[0031] The third element is stitched at the transverse edges 15a and 15b so as to allow the mutual connection of the first and second elements.

[0032] The elastically deformable third element 13 is thus rigidly coupled, at a first transverse edge 15a, to the inner surface of the first element 6 and, at a second transverse edge 15b, to the first rear edge 12a of the second front element 11.

[0033] Said coupling is preferably achieved by conventional methods, such as gluing or thermal bonding in addition to stitching.

[0034] In this particular embodiment, the connection region, designated by the reference numeral 16, is located directly behind the metatarsal region, although it is possible to provide, according to the requirements, different embodiments with connections in the toe region, in the malleolar region or for example in the region above said heel unit 4.

[0035] The operation is as follows: with reference to Figure 1, the innerboot is initially arranged for use of a smaller size, since the third elastically deformable element 13 is not stretched and keeps the first rear edge 12a of the second element 11 inside the first rear element 6.

[0036] As the foot size increases, the deformation applied to the shell, caused for example by the longitudinal sliding of a front toe unit with respect to a heel unit, leads

to a consequent deformation of the innerboot 5, so as to allow to accommodate inside it the foot of a larger size.

[0037] This elongation is allowed by the particular structure of the innerboot, which allows the second front element 11 to slide with respect to the first rear element 6 thanks to the deformation that can be imparted to the third element 13.

[0038] This temporary deformation in any case allows to maintain the connection of the first element and the second element.

[0039] It is also noted that the at least partial concealment of the third element 13 on the part of the first element 6 protects it against impacts and wear, thus extending the life and functionality of the innerboot.

[0040] The position, shape and number of the elastically deformable third element may be the most disparate, as shown in Figures 5 and 6, in which there are respectively two elastically deformable third elements 17a and 17b, which affect only the inner lateral surfaces of the second front edge 12b of the first rear element and of the first rear edge 12a of the second front element.

[0041] As an alternative, it is possible to use a single elastically deformable third element 18 for connection which is arranged only on the bottom of the innerboot.

[0042] In the same way, the elastically deformable element 13 can be arranged on the outside of the innerboot 5, so that the first rear edge 12a of the second front element 11 lies outside the second front edge 12b of the first rear element 6.

[0043] It has thus been observed that the invention has achieved the intended aim and objects, an innerboot for sports shoes having been provided which has a great variation in length and can thus be used for various foot sizes, with consequent financial savings in manufacturing and purchase.

[0044] Moreover the innerboot according to the invention maintains its comfort in use unchanged in all of its arrangements, ensuring considerable duration in terms of useful life.

[0045] The materials used and the dimensions that constitute the individual components of the invention may of course be more pertinent according to the specific requirements.

[0046] The disclosures in Italian Utility Model Application No. TV99U000057 from which this application claims priority are incorporated herein by reference.

[0047] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

## Claims

1. An innerboot for sports shoes, comprising at least one first element and one separate second element which are interconnected by a third elastically deformable element, characterized in that said third elastically deformable element is connected, at a connection region on the inner part of said first element and is at least partially concealed by said first element. 5
2. The innerboot according to claim 1, having a front opening which forms a first flap and a second flap, characterized in that said first element surrounds the malleolar region and partially surrounds the leg, said separate second element being arranged at the front and surrounding the tip of the foot. 10
3. The innerboot according to claim 2, characterized in that said first and second elements can partially overlap respectively at a first front flap and at a second rear flap which are arranged parallel to each other. 15
4. The innerboot according to claim 2, characterized in that said third elastically deformable element for connection between said first and second elements is rectangular and is arranged inside said first element, resting on the bottom of said innerboot and rising along said first and second flaps. 20
5. The innerboot according to one or more of the preceding claims, characterized in that said third element is coupled to the inner surface of said first element at a first transverse edge and to the first rear edge of said second front element at a second transverse edge. 25
6. The innerboot according to one or more of the preceding claims, characterized in that the connection region is located directly behind the metatarsal region of the foot. 30
7. The innerboot according to one or more of the preceding claims, characterized in that it has two elastically deformable third elements which affect only the inner lateral surfaces of said second front edge of said first element and of said first rear edge of said second element. 35
8. The innerboot according to one or more of the preceding claims, characterized in that it has a single third elastically deformable element which affects only the bottom of said innerboot. 40
9. The innerboot according to one or more of the preceding claims, characterized in that said third elastically deformable element is arranged outside said innerboot so that said first rear edge of said second element lies outside said second front edge of said first element. 45
10. The innerboot according to one or more of the preceding claims, characterized in that the connection region is located directly behind the region of the tip of the foot. 50
11. The innerboot according to one or more of the preceding claims, characterized in that the connection region is located directly behind the region of the cuff of the foot. 55

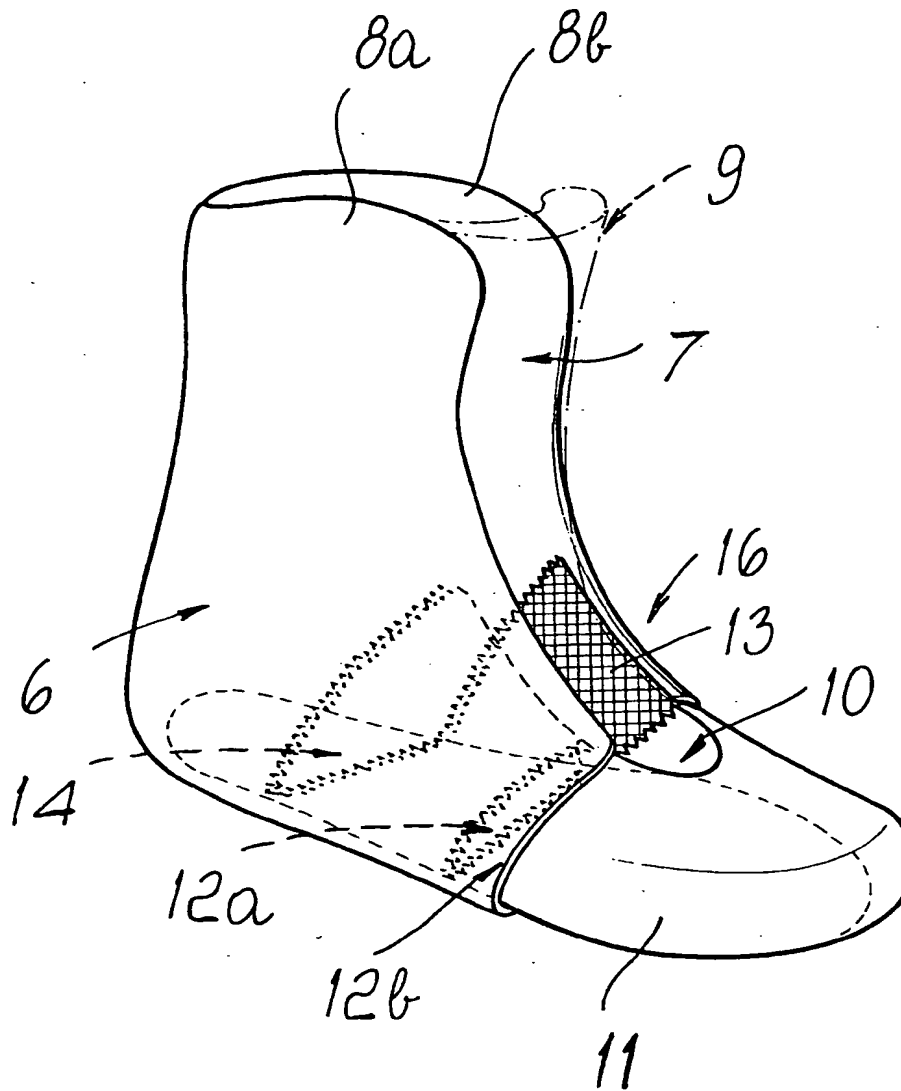


Fig. 1

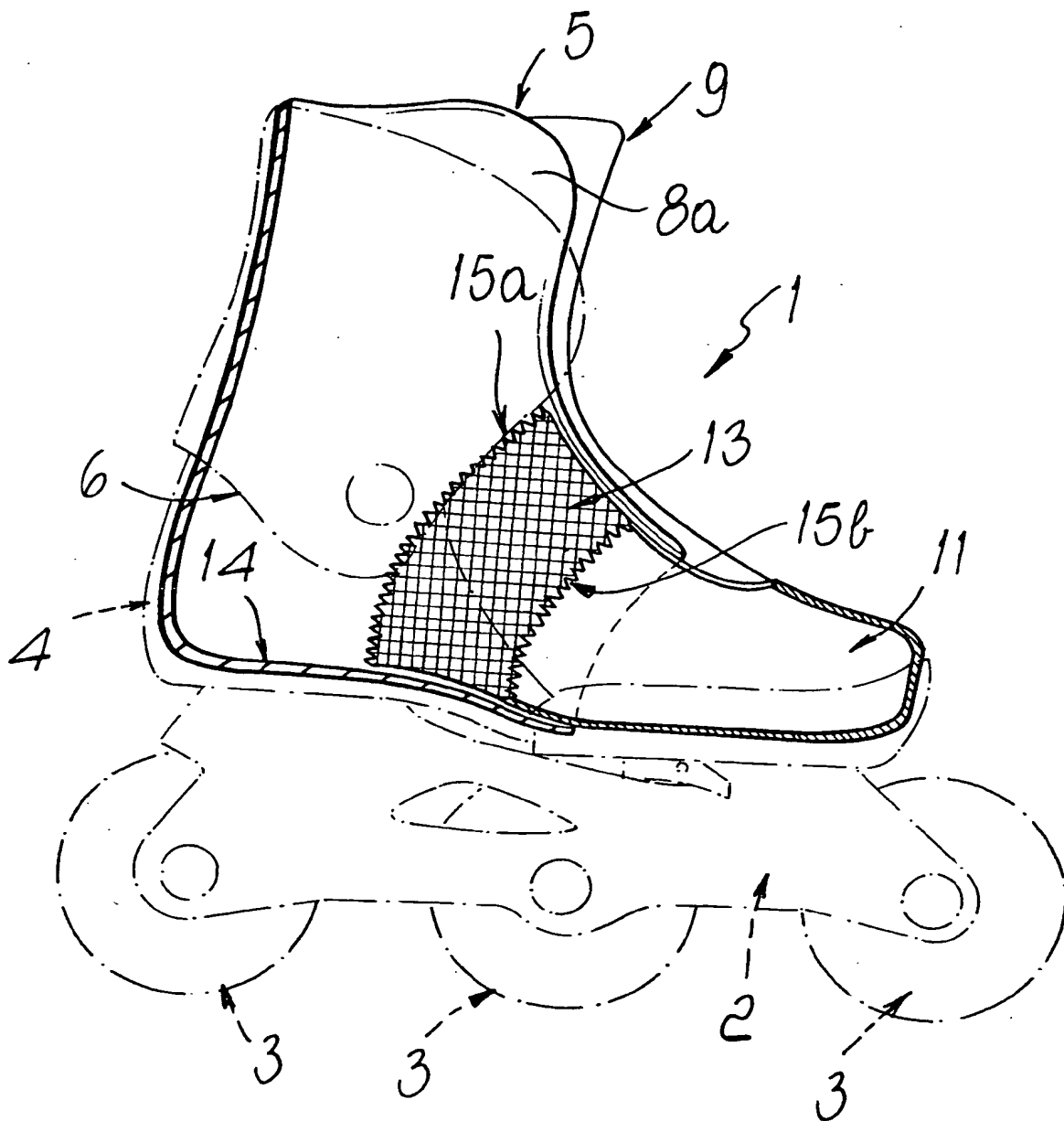


Fig. 2

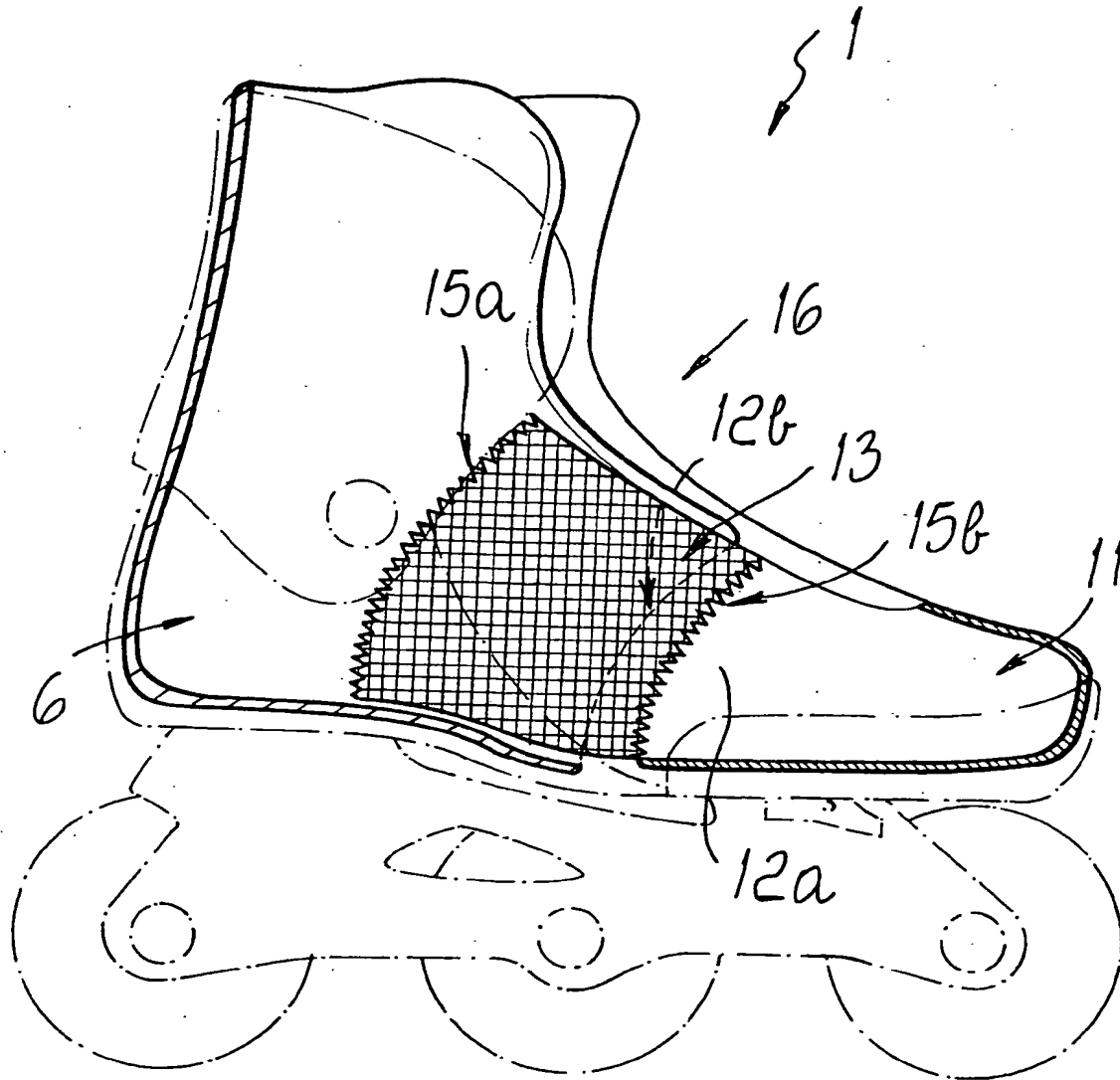
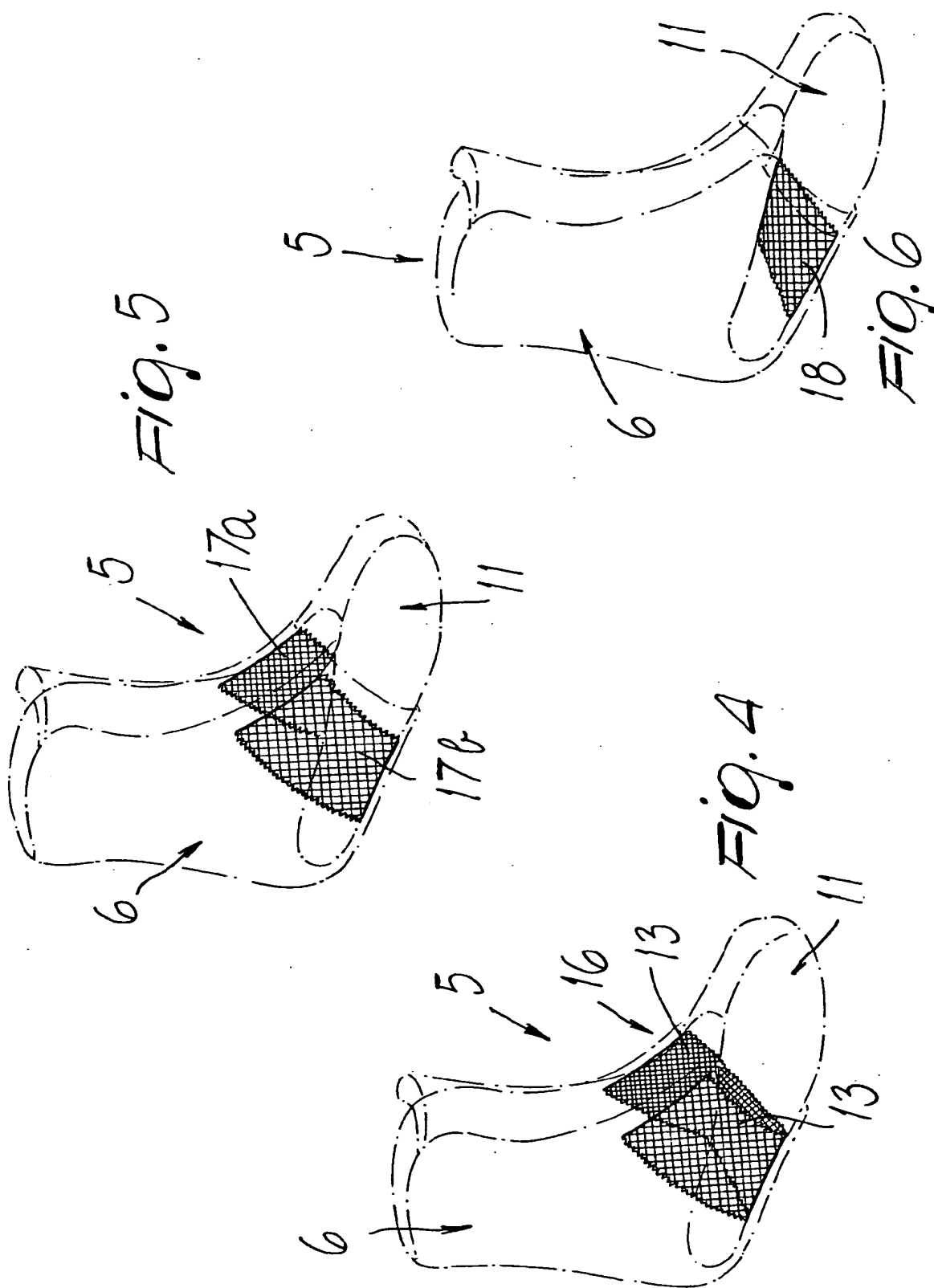
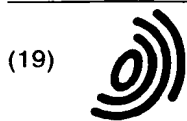


Fig. 3







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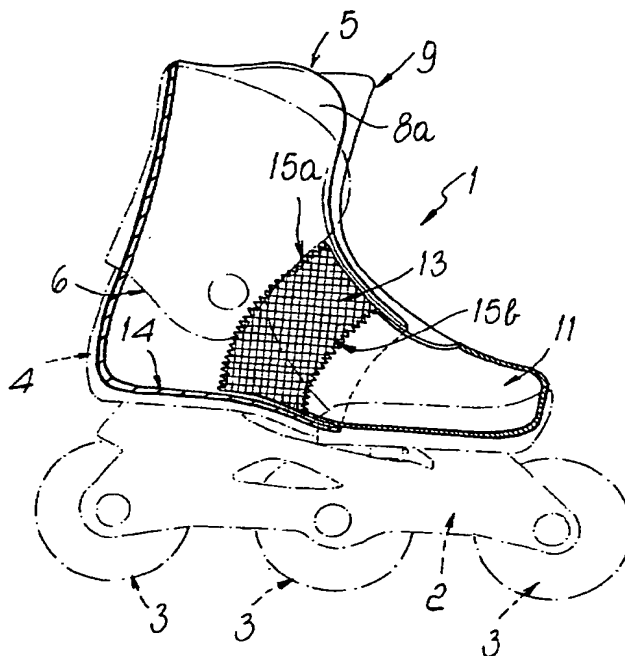
(30) Priority: **31.12.1999 IT TV990057**

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*Fig. 2*



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# EUROPEAN SEARCH REPORT

Application Number  
EP 00 12 7252

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
P, X	GB 2 346 310 A (SENECA SPORTS INC) 9 August 2000 (2000-08-09) * the whole document *	1, 11	A43B3/26 A43B5/04
X	FR 2 358 117 A (MITCHELL SA) 10 February 1978 (1978-02-10) * claims 7-10; figures *	1, 5, 6	
A		7	
D, A	US 5 678 833 A (OLSON TODD JACK ET AL) 21 October 1997 (1997-10-21) * the whole document *	1, 10	
P, A	US 6 045 144 A (WONG JACK) 4 April 2000 (2000-04-04) * the whole document *	1, 9	
A	US 3 024 543 A (KLYM MARY L) 13 March 1962 (1962-03-13) * the whole document *	1, 8	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			A43B
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		18 April 2002	Claudel, B
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Patent document cited in search report		Publication date	Patent family member(s)		Publication date
GB 2346310	A	09-08-2000	NONE		
-----					
FR 2358117	A	10-02-1978	FR	2358117 A1	10-02-1978
			AT	486377 A	15-12-1979
			CH	611495 A5	15-06-1979
			DE	2731557 A1	01-06-1978
			IT	1081132 B	16-05-1985
-----					
US 5678833	A	21-10-1997	AT	204190 T	15-09-2001
			CA	2217383 A1	19-12-1996
			DE	69614522 D1	20-09-2001
			EP	1066862 A2	10-01-2001
			EP	0825893 A1	04-03-1998
			JP	11507254 T	29-06-1999
			SI	825893 T1	31-12-2001
			WO	9640391 A1	19-12-1996
			US	6050574 A	18-04-2000
			US	2001026054 A1	04-10-2001
			US	5913526 A	22-06-1999
-----					
US 6045144	A	04-04-2000	NONE		
-----					
US 3024543	A	13-03-1962	NONE		
-----					

EPO FORM P0489

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